



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: SEP 16 2016

SUBJECT: CLEAN AIR ACT INSPECTION
REPORT
Gerdau Ameristeel US Inc – St Paul Mill, St Paul, Minnesota

FROM: Cindy Schafer, Environmental Engineer CS
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief C. Hall for BD
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Gerdau Ameristeel US Inc – St Paul Mill

Facility Location: 1678 Red Rock Road, St Paul, Minnesota 55119

Date of Inspection: August 30, 2016 and September 1, 2016

Lead Inspector: Cindy Schafer, Environmental Engineer

Purpose of Inspection: Conducted off-site method 9 readings for EU003 Auto Shredder

Facility Type: Steel mini-mill

Regulations Central to Inspection: SIP for PM₁₀ NAAQS; 40 C.F.R. Parts 50 and 51; 40 C.F.R. Part 52, Subpart Y; and Minn. R. 7011.0715, subp. 1(B)

Arrival Time: 9:45am on August 30, 2016
9:40 am on September 1, 2016

Departure Time: 11:00am on August 30, 2016
11:00am on September 1, 2016

Inspection Type:

- ☒ Unannounced Inspection
☐ Announced Inspection

Process Description:

Gerdau Ameristeel US Inc – St Paul Mill (Gerdau) operates a steel mini-mill in St. Paul, Minnesota. The mill receives recycled automobile bodies, tin cans from refuse-derived fuel recycling operations, recycled white goods, and other grades of scrap steel by truck and rail. The automobile bodies, tin cans, and white goods are shredded in an auto shredder. A wet scrubber and cyclone control particulate matter (PM) and PM less than 10 microns (PM₁₀) emissions from the auto shredder.

TOUR INFORMATION

EPA toured the facility: No

Observations:

On August 30, 2016 at 10:27am the EPA inspector observed a plume of smoke originating from the main building at the Gerdau facility while conducting EPA Reference Method 9 opacity readings (Method 9, see 40 CFR Part 60, Appendix A) at the auto shredder stack. The plume interfered with the Method 9 readings; those readings were not included in the analysis of the average 6-minute opacity measured at the auto shredder stack.

On September 1, 2016 at 9:40am as the EPA inspector viewed the Gerdau facility from the intersection of Point Douglas Road and Stinchfield Street in St. Paul, Minnesota, it appeared that there was a fire at the auto shredder and brown smoke was exiting the auto shredder stack. By 9:45am it appeared that operations had stopped at the auto shredder. At 9:47am operations at the auto shredder resumed; the exhaust from the stack included a puff of steam and then became white smoke.

On September 1, 2016 at 10:48am the EPA inspector observed a plume of smoke originating south of the auto shredder. The smoke appeared to originate from a crane operating nearby. The smoke did not interfere with the Method 9 opacity readings.

On September 1, 2016 at 10:53am the EPA inspector observed a plume of very dense smoke originating between the auto shredder and the EPA inspector while conducting Method 9 opacity readings at the auto shredder stack. The smoke lingered for more than one minute and interfered with the Method 9 readings; those readings were not included in the analysis of the average 6-minute opacity measured at the auto shredder stack. At the time the plume was observed the EPA inspector was unable to ascertain the source of the smoke. Upon conclusion of the Method 9 readings, the EPA inspector investigated possible sources of the smoke. The likely source of the smoke was from a locomotive engine passing by the facility.

Field Measurements: were taken during this inspection.

Analysis of the Method 9 opacity readings taken on August 30, 2016 shows that there were seven 6-minute periods that exceeded the 20% opacity limit for the auto shredder during the timeframe from 9:57am to 10:57am. The highest 6-minute average opacity was 36.5%.

Analysis of the Method 9 opacity readings taken on September 1, 2016 shows that there were six 6-minute periods that exceeded the 20% opacity limit for the auto shredder during the timeframe from 10:05am to 10:58am. The highest 6-minute average opacity was 43.5%.

Concerns: This facility is located in an area that was previously designated as non-attainment under the National Ambient Air Quality Standards (NAAQS) for PM₁₀. On September 24, 2002, the area was redesignated as attainment for the PM₁₀ NAAQS. Compliance with emission limits relating to particulate matter emissions is important for the area to remain in attainment of the PM₁₀ NAAQS.

SIGNATURES

Lead Inspector: Cynthia A. Schiefer Date: 9/9/2016

Section Chief: Charles Hall for Dickens Date: 19 September 2016

Facility Name: Gerdau Ameristeel US Inc – St Paul Mill

Facility Location: 1678 Red Rock Road, St. Paul, Minnesota 55119

Date of Inspection: August 30, 2016 and September 1, 2016

APPENDICES

- Appendix A: Method 9 Observation Forms for August 30, 2016
- Appendix B: Method 9 Observation Forms for September 1, 2016
- Appendix C: Photo Log

Facility Name: Gerdau Ameristeel US Inc – St Paul Mill
Facility Location: 1678 Red Rock Road, St. Paul, Minnesota 55119
Date of Inspection: August 30, 2016 and September 1, 2016

APPENDIX A: METHOD 9 OBSERVATION FORMS FOR AUGUST 30, 2016

EPA Reference Method 9 opacity observations of the auto shredder made from the intersection of Baily Road and the northbound entrance ramp for Highway 61. From this vantage point, the observer and the top of the auto shredder stack were at approximately the same elevation.

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method 9 203A 203B Other: _____

Company Name Gerdau Ameristeel
 Facility Name Gerdau Ameristeel - St. Paul Mill
 Street Address 1478 Red Rock Road
 City St. Paul State MN Zip 55119

Process Fluor Auto Shredder Unit # _____ Operating Mode operating
 Control Equipment Wet Spray Operating Mode operating?

Describe Emission Point
Auto Shredder stack exhaust

Height of Emiss. Pt. Start 60ft End 60ft Height of Emiss. Pt. Rel. to Observer Start 0ft End 0ft
 Distance to Emiss. Pt. Start 1200ft End 1200ft Direction to Emiss. Pt. (Degrees) Start West End West

Vertical Angle to Obs. Pt. Start 0° End 0° Direction to Obs. Pt. (Degrees) Start West End West
 Distance and Direction to Observation Point from Emission Point Start 1200ft West End 1200ft West

Describe Emissions
 Start White smoke End White smoke
 Emission Color Start White End White Water Droplet Plume Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start Green trees End Green trees
 Background Color Start Green End Green Sky Conditions Start overcast End overcast
 Wind Speed Start 8 mph End 7 mph Wind Direction Start NNW End NNW
 Ambient Temp Start 70°F End 73° Wet Bulb Temp 65° RH Percent 86%

Source Layout Sketch
 Draw North Arrow ☒ TN ☐ MN

 Longitude -93.007 Latitude 44.9325 Declination _____

Additional Information
at entrance to 61N from Bailey Road
emission plume coming left

Form Number 83006 Page 1 of 2
 Continued on VEO Form Number _____

| Observation Date | | Time Zone | | | | Start time | End Time |
|------------------|-----|-----------|----|----|----|---------------|--------------|
| <u>8/30/2016</u> | | | | | | <u>9:57am</u> | <u>10:27</u> |
| Min | Sec | 0 | 15 | 30 | 45 | Comments | |
| 1 | 25 | 65 | 50 | 35 | | | |
| 2 | 25 | 25 | 20 | 20 | | | |
| 3 | 10 | 10 | 20 | 20 | | | |
| 4 | 10 | 20 | 20 | 25 | | | |
| 5 | 20 | 25 | 55 | 55 | | | |
| 6 | 30 | 20 | 35 | 15 | | | |
| 7 | 10 | 35 | 25 | 20 | | | |
| 8 | 10 | 5 | 25 | 20 | | | |
| 9 | 10 | 15 | 10 | 10 | | | |
| 10 | 10 | 10 | 10 | 15 | | | |
| 11 | 15 | 15 | 10 | 15 | | | |
| 12 | 20 | 10 | 30 | 30 | | | |
| 13 | 20 | 10 | 20 | 10 | | | |
| 14 | 10 | 25 | 40 | 25 | | | |
| 15 | 10 | 10 | 5 | 35 | | | |
| 16 | 20 | 20 | 15 | 25 | | | |
| 17 | 65 | 45 | 35 | 20 | | | |
| 18 | 20 | 45 | 35 | 25 | | | |
| 19 | 15 | 15 | 70 | 45 | | | |
| 20 | 30 | 25 | 40 | 45 | | | |
| 21 | 35 | 35 | 45 | 35 | | | |
| 22 | 15 | 30 | 10 | 10 | | | |
| 23 | 25 | 20 | 10 | 5 | | | |
| 24 | 15 | 15 | 40 | 35 | | | |
| 25 | 15 | 5 | 20 | 5 | | | |
| 26 | 5 | 5 | 25 | 25 | | | |
| 27 | 35 | 30 | 10 | 5 | | | |
| 28 | 10 | 15 | 20 | 30 | | | |
| 29 | 40 | 5 | 20 | 5 | | | |
| 30 | 5 | 10 | 30 | 25 | | | |

Observer's Name (Print) Cindy Schaefer
 Observer's Signature Cindy Schaefer Date 8/30/2016
 Organization U.S. EPA
 Certified By IL EPA Date 4/13/2016

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One) Method 9 203A 203B Other _____

Company Name See Page 1
 Facility Name _____
 Street Address _____
 City _____ State _____ Zip _____

Process _____ Unit # _____ Operating Mode _____
 Control Equipment _____ Operating Mode _____

Describe Emission Point

 Height of Emiss. Pt. _____ Height of Emiss. Pt. Rel. to Observer _____
 Start _____ End _____ Start _____ End _____
 Distance to Emiss. Pt. _____ Direction to Emiss. Pt. (Degrees) _____
 Start _____ End _____ Start _____ End _____

Vertical Angle to Obs. Pt. _____ Direction to Obs. Pt. (Degrees) _____
 Start _____ End _____ Start _____ End _____
 Distance and Direction to Observation Point from Emission Point
 Start _____ End _____

Describe Emissions
 Start _____ End _____
 Emission Color _____ Water Droplet Plume
 Start _____ End _____ Attached ☐ Detached ☐ None ☐

Describe Plume Background
 Start _____ End _____
 Background Color _____ Sky Conditions _____
 Start _____ End _____ Start _____ End _____
 Wind Speed _____ Wind Direction _____
 Start _____ End _____ Start _____ End _____
 Ambient Temp. _____ Wet Bulb Temp. _____ RH Percent _____
 Start _____ End _____

Source Layout Sketch
 Draw North Arrow ☐ TN ☐ MN

 Longitude _____ Latitude _____ Declination _____

Additional Information
At 10:27am - emissions of high opacity from behind main building - lasted VEOF1.1 about 30 seconds

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 Continued on VEO Form Number _____

| Observation Date | | Time Zone | | Start Time | End Time | |
|------------------|-----|-----------|----|------------|----------|--------------------------------------|
| 8/30/2016 | | | | 10:27 | 10:57 | |
| Min | Sec | 0 | 15 | 30 | 45 | Comments |
| 1 | 35 | 30 | 45 | 40 | | Plume from other building interfered |
| 2 | 15 | 5 | 5 | 5 | | |
| 3 | 20 | 5 | 25 | 15 | | |
| 4 | 50 | 55 | 45 | 65 | | |
| 5 | 65 | 70 | 70 | 55 | | |
| 6 | 50 | 25 | 55 | 30 | | |
| 7 | 25 | 55 | 35 | 25 | | |
| 8 | 20 | 15 | 5 | 20 | | |
| 9 | 25 | 15 | 5 | 10 | | |
| 10 | 5 | 15 | 40 | 30 | | |
| 11 | 10 | 10 | 10 | 10 | | |
| 12 | 15 | 20 | 30 | 45 | | |
| 13 | 45 | 50 | 45 | 35 | | |
| 14 | 20 | 30 | 35 | 20 | | |
| 15 | 20 | 35 | 15 | 5 | | |
| 16 | 5 | 40 | 45 | 30 | | |
| 17 | 15 | 5 | 20 | 20 | | |
| 18 | 5 | 30 | 30 | 25 | | |
| 19 | 15 | 40 | 45 | 40 | | |
| 20 | 35 | 40 | 45 | 35 | | |
| 21 | 20 | 15 | 40 | 50 | | |
| 22 | 35 | 5 | 10 | 50 | | |
| 23 | 60 | 45 | 40 | 25 | | |
| 24 | 10 | 5 | 5 | 20 | | |
| 25 | 35 | 30 | 25 | 20 | | |
| 26 | 20 | 45 | 45 | 20 | | |
| 27 | 10 | 30 | 40 | 40 | | |
| 28 | 30 | 45 | 55 | 35 | | |
| 29 | 25 | 35 | 25 | 15 | | |
| 30 | 20 | 30 | 35 | 35 | | |

Observer's Name (Print) Cindy Schofer
 Observer's Signature Cynthia Schofer Date 8/30/2016
 Organization U.S. EPA
 Certified by LC EPA Date 9/13/2016

Facility Name: Gerdau Ameristeel US Inc – St Paul Mill
Facility Location: 1678 Red Rock Road, St. Paul, Minnesota 55119
Date of Inspection: August 30, 2016 and September 1, 2016

APPENDIX B: METHOD 9 OBSERVATION FORMS FOR SEPTEMBER 1, 2016

EPA Reference Method 9 opacity observations of the auto shredder made from the intersection of Baily Road and the northbound exit ramp for Highway 61. From this vantage point, the observer and the top of the auto shredder stack were at approximately the same elevation.

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method 9 203A 2038 Other: _____

Company Name
 Gerdau Ameristeel-St. Paul Mill
 Facility Name
 Gerdau Ameristeel
 Street Address
 1678 Red Rock Road
 City State Zip
 St. Paul MN 55119

Process
 Euro3 Auto Shredder
 Unit #
 Operating Mode
 Operating
 Control Equipment
 Wet Spray
 Operating Mode
 Operating

Describe Emission Point
 Auto Shredder Stack Exhaust
 Height of Emiss. Pt.
 Start 60ft End 60ft
 Height of Emiss. Pt. Rel. to Observer
 Start 0ft End 0ft
 Distance to Emiss. Pt.
 Start 1200ft End 1200ft
 Direction to Emiss. Pt. (Degrees)
 Start West End West

Vertical Angle to Obs. Pt.
 Start 0° End 0°
 Direction to Obs. Pt. (Degrees)
 Start West End West
 Distance and Direction to Observation Point from Emission Point
 Start 1200ft West End 1200ft West

Describe Emissions
 Start White/gray smoke White/gray smoke
 End White/gray smoke
 Emission Color
 Start White/gray End White/gray
 Water Droplet Plume
 Attached ☐ Detached ☐ None ☒

Describe Plume Background
 Start green trees End green trees
 Background Color
 Start green End green
 Sky Conditions
 Start blue/gray End blue/gray
 Wind Speed
 Start 3 mph End 6 mph
 Wind Direction
 Start ESE End ESE
 Ambient Temp.
 Start 67°F End 67°F
 Wet Bulb Temp.
 Start 55° dewpt End 61% RH

Source Layout Sketch
 Draw North Arrow
☒ TN ☐ MN

 Longitude -93.006065 Latitude 44.891080 Declination
 Additional Information
 exhaust coming right or lofting upwards depending on wind

VEOF1.1

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Form Number 93116 Page 1 of 2
 Continued on VEO Form Number

9/11/2016
 Observation Date 9/31/2016 Time Zone Central Start time 10:05 End time 10:36

| Min | Sec | 0 | 15 | 30 | 45 | Comments |
|-----|-----|----|----|----|----|-----------------------------------|
| 1 | 30 | 35 | 20 | 20 | | |
| 2 | 30 | 35 | 35 | 35 | | |
| 3 | 25 | 20 | 20 | 25 | | |
| 4 | 15 | 15 | 20 | 15 | | |
| 5 | 15 | 15 | 15 | 20 | | |
| 6 | 25 | 35 | 20 | 30 | | |
| 7 | 40 | 55 | 60 | 50 | | Steam plume - reading after steam |
| 8 | 55 | 40 | X | X | | blocked by trucks |
| 9 | 25 | 15 | 30 | 25 | | |
| 10 | 25 | 20 | 35 | 35 | | Steam no longer present |
| 11 | 30 | 20 | 15 | 15 | | |
| 12 | 20 | 20 | 20 | 25 | | |
| 13 | X | X | 15 | 10 | | blocked by truck |
| 14 | 10 | 5 | 5 | 5 | | |
| 15 | 5 | 0 | 0 | 0 | | |
| 16 | 0 | 0 | 0 | 0 | | |
| 17 | 0 | 0 | 0 | 0 | | |
| 18 | 5 | 10 | 15 | 25 | | |
| 19 | 35 | 10 | 15 | 5 | | |
| 20 | 10 | 10 | 10 | 15 | | |
| 21 | 15 | 10 | 15 | 20 | | |
| 22 | 25 | 35 | 20 | 5 | | |
| 23 | 0 | 0 | 0 | 5 | | |
| 24 | 20 | 15 | 15 | 20 | | |
| 25 | 15 | 10 | 10 | 15 | | |
| 26 | 15 | 10 | 10 | 10 | | |
| 27 | 10 | 5 | 10 | 10 | | |
| 28 | 5 | 15 | 20 | 30 | | |
| 29 | 30 | 20 | 15 | 25 | | |
| 30 | 40 | 40 | 45 | 35 | | |

Observer's Name (Print)
 Cindy Schafer
 Observer's Signature
 Cynthia A. Schafer
 Date 9/11/2016
 Organization
 U.S. EPA
 Certified By
 IL EPA
 Date 9/13/2016

EPA

VISIBLE EMISSION OBSERVATION FORM 1

| | | | |
|--------------------------|------|------|--------------|
| Method Used (Circle One) | 203A | 203B | Other: _____ |
|--------------------------|------|------|--------------|

| | | |
|----------------|-------|-----|
| Company Name | | |
| Facility Name | | |
| Street Address | | |
| City | State | Zip |

| | | |
|-------------------|--------|----------------|
| Process | Unit # | Operating Mode |
| Control Equipment | | Operating Mode |

| | | | |
|-------------------------|-----|---------------------------------------|-----|
| Describe Emission Point | | | |
| Height of Emiss. Pt. | | Height of Emiss. Pt. Rel. to Observer | |
| Start | End | Start | End |
| Distance to Emiss. Pt. | | Direction to Emiss. Pt. (Degrees) | |
| Start | End | Start | End |

| | | | |
|---|-----|---------------------------------|-----|
| Vertical Angle to Obs. Pt. | | Direction to Obs. Pt. (Degrees) | |
| Start | End | Start | End |
| Distance and Direction to Observation Point from Emission Point | | | |
| Start | End | Start | End |

| | | | |
|--------------------|-----|-----------------------------------|---|
| Describe Emissions | | | |
| Emission Color | | Water Droplet Plume | |
| Start | End | Attached <input type="checkbox"/> | Detached <input type="checkbox"/> None <input type="checkbox"/> |

| | | | |
|---------------------------|-----|----------------|-----|
| Describe Plume Background | | | |
| Background Color | | Sky Conditions | |
| Start | End | Start | End |
| Wind Speed | | Wind Direction | |
| Start | End | Start | End |
| Ambient Temp. | | Wet Bulb Temp. | |
| Start | End | Start | End |

| | | | |
|----------------------|----------|---|--|
| Source Layout Sketch | | Draw North Arrow | |
| | | <input type="checkbox"/> TN <input type="checkbox"/> MN | |
| Longitude | Latitude | Declination | |

| | |
|------------------------|--|
| Additional Information | |
| | |

VEOF1.1

90116

| | | | | | |
|------------------------------|-------|------|---|----|---|
| Form Number | 90116 | Page | 2 | of | 2 |
| Continued on VEO Form Number | | | | | |

| | | | | | |
|------------------|----|-----------|----|------------|-----------------------|
| Observation Date | | Time Zone | | Start Time | End Time |
| 9/11/2016 | | Central | | 10:36 | 10:58 |
| Sec | 0 | 15 | 30 | 45 | Comments |
| Min | 0 | 15 | 30 | 45 | |
| 1 | 45 | 45 | 35 | 30 | |
| 2 | 25 | 25 | 35 | 50 | |
| 3 | 40 | 55 | 55 | 45 | |
| 4 | 45 | 40 | 40 | 50 | |
| 5 | 60 | 55 | 50 | 40 | |
| 6 | 35 | 35 | 30 | 35 | |
| 7 | 55 | 45 | 30 | 30 | |
| 8 | 45 | 45 | 30 | 25 | |
| 9 | 20 | 20 | 30 | 40 | |
| 10 | 30 | 25 | 25 | 25 | |
| 11 | 15 | 20 | 20 | 25 | |
| 12 | 25 | 30 | 15 | 15 | |
| 13 | 10 | 5 | 10 | 5 | plume from pile to |
| 14 | 10 | 25 | 30 | 35 | left appeared - |
| 15 | 25 | 25 | 35 | 30 | did not interfer |
| 16 | 30 | 25 | 15 | 40 | - from crane? |
| 17 | 35 | 20 | 10 | 25 | |
| 18 | 50 | 40 | X | X | plume closer to me |
| 19 | X | X | X | X | appeared - interfered |
| 20 | 45 | 45 | 45 | 50 | with readings - very |
| 21 | 50 | 40 | 40 | 25 | dense smoke and |
| 22 | 20 | 10 | 5 | 0 | lingered |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | | | | | |
| 25 | | | | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |

| | | | |
|-------------------------|--|-----------|--|
| Observer's Name (Print) | | Date | |
| Cindy Schafer | | 9/1/2016 | |
| Observer's Signature | | Date | |
| Cynthia A. Schuler | | 9/1/2016 | |
| Organization | | Date | |
| U.S. EPA | | 9/13/2016 | |
| Certified by | | Date | |
| IL EPA | | 9/13/2016 | |

Facility Name: Gerdau Ameristeel US Inc – St Paul Mill
Facility Location: 1678 Red Rock Road, St. Paul, Minnesota 55119
Date of Inspection: August 30, 2016 and September 1, 2016

APPENDIX C: PHOTO LOG

See attached CD

- IMG_0316.JPG
Photo taken on August 30, 2016 from the intersection of Bailey Road and the northbound entrance ramp to Highway 61
- IMG_0317.JPG
Photo taken on August 30, 2016 from the intersection of Bailey Road and the northbound entrance ramp to Highway 61
- IMG_0318.JPG
Photo taken on September 1, 2016 from the intersection of Point Douglas Road and Stinchfield Street
- IMG_0319.JPG
Photo taken on September 1, 2016 from the intersection of Bailey Road and the northbound exit ramp from Highway 61
- IMG_0320.JPG
Photo taken on September 1, 2016 from the intersection of Bailey Road and the northbound exit ramp from Highway 61